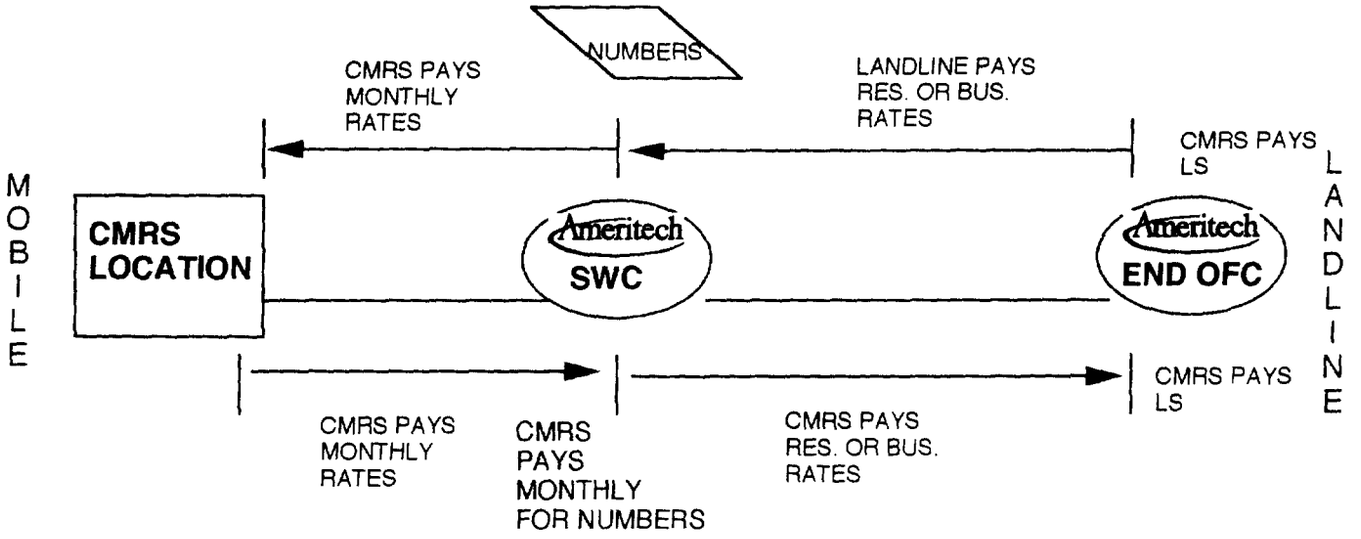
TYPE 1 - ALL STATES

BILLING - Landline pays in one direction
CMRS pays part in one direction and all in other direction

Telephone numbers rated at *SWC*



IN THE MATTER OF

FCC DOCKET 95-185, PRICING FOR CMRS INTERCONNECTION

Statement of Kenneth Gordon

on behalf of Ameritech

March 4, 1996

STATEMENT OF KENNETH GORDON

I. QUALIFICATIONS

I am Senior Vice President of National Economic Research Associates, Inc. (NERA), 1800 M St. N.W., Washington, D.C. 20036, and have held that position since November of 1995. Immediately prior to that I was Chairman of the Massachusetts Department of Public Utilities, and before that was Chairman of the Maine Public Utilities Commission. I have been an economist since 1965, and since 1980, when I became an industry economist at the FCC, have been directly involved with developing and establishing virtually all aspects of regulatory policy for telecommunications at the federal and state levels. While I was at the Massachusetts Commission, that Commission undertook a proceeding to examine in detail interconnection and other issues related to the development of competition at all levels of telecommunications. A copy of my curriculum vitae describing my educational and professional background in greater detail is attached.

II. PURPOSE OF STATEMENT

This statement addresses proper pricing principles for the mutual interconnection of telecommunications networks, such that every service provider who proposes to serve some or all portions of a market[1], whether as a CMRS or some other industry element, including the incumbent LEC, will be able to do so on a fair and efficient basis. In an appropriately structured system, each firm will be able to succeed or fail on the basis of its relative efficiency in meeting customers' needs. The Commission should be concerned, as it adopts policies aimed at allowing and/or encouraging a more competitive market structure for communications, that it adopt a framework that will allow market forces, and not factors of its own design unrelated to the actual relative efficiencies of firms, to determine which firms succeed, and which fail, in serving the various markets that are being contested. Interconnection terms and conditions that do not reflect the true costs and circumstances of interconnection activities run a risk of driving outcomes that will ultimately increase costs to consumers, or foreclosing arrangements that would have been more advantageous to consumers.

[1] In this statement, the term "market" is used in its generic economic sense, and does not refer to particular markets or market segments unless so stated.

In particular, I examine the Commission's tentative conclusion that, at least on an interim basis, a so-called "bill and keep" arrangement would be an appropriate way to handle interconnection pricing between LEC's and CMRS's. I conclude, for reasons laid out in the rest of this statement, that a Commission-ordered, that is a non-consensual, bill and keep arrangement is inappropriate either as an interim or as a permanent feature of interconnection arrangements. Unless certain very specific, and highly fortuitous circumstances obtain, bill and keep will to a greater or lesser degree tilt the competitive process away from the most efficient outcomes. Because significant investments in network facilities are already being made, the long term effects of interconnection pricing arrangements on efficiency, and therefore on customers, must be considered now. And because the proper pricing principles are well known, there is no need to turn to an "interim" arrangement.

III. CONTEXT AND INDUSTRY SETTING

Since the late 1970's, United States telecommunications policies have increasingly favored reliance on competition and on market forces to propel the provision of both new and older services in a more efficient and effective manner. Federal policies (as well as, increasingly, state policies) have recognized that where competition is workable, market-driven outcomes are more likely to serve consumers' interests than administratively determined, regulated outcomes. The old, that is pre-divestiture, Bell System provided (along with its non-competing independent partners) the archetypal example of a private centralized planning system. Decisions in that system were made, as they are typically made within any firm, in a centralized and essentially administrative fashion. Virtually every aspect of telephone service provisioning was comprehensively provided for by the engineers and managers of that system. The procedures were actually laid out in book form. (See, Engineering and Operations of the Bell System). Of course, A.T. & T. also held a firm monopoly position, and so the checks on the firm's planning and operations decisions that a competitive market might provide were absent. The decision to break up the Bell system, effected in 1984, and the adoption of a new telecommunications regulatory framework by the Congress in early 1996 have signaled, irrevocably, a move away from this type of economic organization and toward market determined outcomes.

This shift in regulatory policy toward increased reliance on markets is no less than a dismissal of the old single firm central planning mechanism. In its place is substituted a decentralized, market-based mechanism in which firms' decisions about where, how, when, and in what form new investment will take place are made, based on market place realities and consumers' choices. Any particular telecommunications company may choose to provide either a complete end-to-end service or only a small piece of the whole, according to the particular skills and capabilities they bring to the process. Which course any particular provider takes will also be driven by the prices it can expect to receive for the services it offers and, of particular interest in this proceeding, of the inputs that it will be employing to offer that service. In such a world, there is no single "right way" to provide services—how that will be done will depend on the particular opportunities facing each participant. Where a particular approach requires more expensive inputs, that approach will tend to be avoided; similarly, when some input is available relatively inexpensively it will tend to be used abundantly. The price of that input, and/or of the unbundled components of that input, will be an important determinant of the mix of services that is purchased by a provider from others, and of which are provided internally. In short, network interconnection pricing will be a major determinant of how the overall network unfolds. Indirectly, therefore, it will affect the services each firm can offer competitively, as well as their price and quality.

In such a world there will be, in addition to "the" overall network, subnetworks and even sub-elements of networks owned and operated by different firms. Indeed, some observers have noted that what is unfolding for the future is a "network of networks." Where such structures are developed through independent entrepreneurship in a market setting there is what we could call "decentralized coordination". The market and competition create a single, interconnected but diversely provisioned network. No single party, indeed probably no party at all, reaches for Engineering and Operations in the Bell System to find out what to do next and how to do it. Yet, with the right market and regulatory structures, the overall network can be built reliably and efficiently in this fashion. Indeed, on an overall basis, it is very likely to be more efficient than under the older, centralized planning approach, because markets that are allowed to operate freely bring more information to the decision-making process than any administrative process can possibly handle. The critical information carrier in the market place is, of course, prices.

In the instant Notice of Proposed Rulemaking, as well as numerous prior orders, the Commission has set an appropriate goal of maximizing the benefits of telecommunications for American consumers and society, and has adopted market-based incentives and price as the mechanisms for achieving these goals. Where consumers receive cost-based signals, the Commission has said, they will purchase services only when the value to them is greater than the cost of production. (para.4 of the NPRM) The Commission goes on to say that "[i]n

addition, these policies, over time, should ensure an efficient level of innovation in terms of the development of new services and the deployment of new technology, as well as the efficient entry of new firms. Service providers should make optimal levels of investments in developing new technologies and new services,..."(NPRM, para.4)

The goals the Commission has identified are appropriate ones: all related to an efficiently evolving telecommunications structure, with each portion of that structure provided by the supplier best able to do so. As already mentioned, the key to decentralized decisions (e.g.-reliance on markets) structuring efficient networks is clearly understandable, accurate information. In particular, to work efficiently, the process requires prices that accurately reflect the appropriate costs. Prices, in effect, are the carriers of information critical to correct decisions, information that is no longer assembled in the old administratively driven way. The same prices also give each participant the incentive to invest in facilities or buy a service, as appropriate.

Thus the Commission is correct in its conclusion that interconnection pricing is critical to efficient investment decisions. It is, however, incorrect to conclude that a regulatory imposed bill and keep approach to interconnection pricing will achieve the goals it quite properly has laid out. Inappropriate investment decisions - by all parties - will, to a greater or lesser degree, be the likely outcome and the competitive process will be in some measure distorted. To put it succinctly, if the Commission imposes bill and keep arrangements for

pricing interconnection, it ostensibly will be relying on the market system—but without the prices that are needed to carry the information and provide the incentives in a market based system. Proceeding in this way creates an externality—a cost or benefit impact that is borne neither by nor appropriated by the party causing it. In most instances of which I am aware, causing an externality in this fashion is regarded as a problem, not a solution.

In fact, regulators usually create programs to eliminate externalities, not the other way around. For example, the EPA, to the applause of economists and environmentalists alike, has in recent years begun to put a price on pollution, through the adoption of tradable emissions allowances. The effect is to make potential polluters think twice about using the air as a dumping ground, and to take cost effective actions to use the atmosphere sensibly.

There is already appearing an interconnection market in the telephone industry, as numerous negotiated agreements (among LECs, CLECs, cable TV companies and cellular providers) attest. Many of these agreements have reflected a non-zero price for terminating access. While not all interconnection disputes have yet been resolved, that may be due in part to the uncertainty created by the failure of policymakers to resolve their approach to this issue. The Commission is, of course, well aware that an early resolution of this issue is desirable. But mandatory bill and keep would be a movement away from a market that has already made a good start, and a real step backward as well.

Admittedly, defining and then measuring the interconnection costs correctly requires some effort and is subject to some uncertainty. It may be fairly low in some circumstances and at particular times, and higher at others. There may be significant capacity costs and low usage costs for some providers at certain times, while (presumably temporary) congestion may lead to higher real usage costs. The costs of terminating traffic may also vary depending on where in the recipient's network a call is terminated. It is clear that there are many separate cost issues with respect to termination, and they need to be effectively presented to firms making decisions about whether, when and how to expand their networks and terminate traffic that they originate. It is the function of a market system to reflect these factors as they need to be reflected, and mandated bill and keep (or, for that matter, any single mandated price) cannot perform this function. The one thing we do know is that interconnection costs, whatever they are in any particular setting, are not in general zero.

IV. INTERCONNECTION DECISIONS AND COMPENSATION IN NETWORKS

Each of the telecommunications carriers involved in exchanging traffic with another carrier, whether incumbent LEC, interexchange (IX) carrier, competitive LEC (CLEC), or wireless provider of whatever type (CMRS), may be involved in full, partial, or potential competition with every other provider. This will become increasingly the case under the recently enacted Telecommunications Act of 1996, as the effects of the MFJ strictures on the former Bell companies recede, and is even true where much of the business the various carriers do with each other appears complementary in nature, as when a LEC terminates a call for an IXC or a cellular company. Each is a potential contestant for every other market. Of course, such competition may lead in any particular circumstance to only a portion of another's network being substituted or contested. In other situations it may lead to a new end-to-end service. There is no way to predict how innovative entrepreneurs will proceed. The point of the competition process that the Commission has embraced, and of the interconnection policies that are an essential underpinning of those policies, is to ensure that each segment or service is provided by that firm which offers the highest value to customers, and does so at the lowest cost. The test of a good interconnection policy is that it points toward this result.

Where a new entrant can offer a better service at a lower price, account being taken of all the costs of that service, the new entrant should prevail, and

there is a presumption that the success of that entrant is socially beneficial. The same considerations may, of course, lead to the success of the incumbent. Both outcomes are a part of an efficient competitive process where neither party gains via an artificial advantage, whether it arises from a market position or a regulatory mandate.

If interconnection prices are set too high, interconnection services are underutilized, and inefficient bypass to avoid the costly service may occur. Where new entrants who can offer service at a lower social cost than the incumbent are deprived, artificially, of the ability to do so, customers lose. They lose because they cannot avail themselves of natural price or service advantages that the new entrant may be able to offer. That is obvious, and widely recognized. Less widely recognized, even at this relatively advanced stage of increased competition in the telecommunications industries, but equally important, is that artificially enhanced competition is the other side of the same coin. When a price is set below cost, and the associated service is made available to certain competitors through regulatory requirements, an artificial advantage is conferred. Other firms that can provide the service more efficiently are relatively disadvantaged. Sorting out these questions, determining who can best provide a service or a portion of a service, is what markets do better than administrators—but only when prices are allowed to carry accurate and complete information about the real options that customers face.

An observed increase in the number of competitors in the industry may signal that the new firms can offer a better service, or offer a service more efficiently than the incumbent can. Such will be the case if all the costs are being taken into account. If, however, some costs are not being accounted for, no such conclusion can be drawn. The new firm who wins business may be the most efficient provider, but its success may also be an artifact of regulation that neglects certain costs. In that instance, the new competition may not be sustainable in the long run if regulation is removed, and will not be efficient in the short run either. The object of Commission policy should be to promote a competitive, open process, not simply an expansion in the number of competitors. Bill and keep will only achieve this by accident or coincidence. The "helping hand" approach to competition has always had doubtful parentage; given the size, strength, and experience of companies in the cellular marketplace, a deliberate tilting of the playing field to favor any player is simply uncalled for. For example, the top ten companies who include cellular in their offerings serve from 19 million to over 65 million customers. By no stretch of the imagination are they "infants" in need of an extra "boost."

The decisions that will be affected by the Commission's interconnection pricing policies will often be quite narrow, and targeted to specific relative advantages and opportunities. One way to see this is to imagine "the" network as a large puzzle, with different firms supplying the pieces they have the greatest advantage in supplying. At the broadest level, a new entrant has to decide

whether to build complete network facilities itself in order to provide service, or whether to build some and utilize some portion of another firm's facilities. The choice will be rather clear when delivering a call to someone else's customers; in the short run, there is really no choice at all if you are to serve your own customer effectively. In the longer term, however, there may be an opportunity to deliver calls by other routes, including over facilities that are self provisioned.

An example may help to make this clearer. A cellular service provider can and should have the option of delivering calls to the incumbent's network at the point that is most cost effective for itself, given that the incumbent is, in turn, able to price the service selected in a way that reflects costs efficiently. Under these circumstances the entrant may connect in a different manner in different locations and over time. Initially, the easiest connection to the existing network for a particular class of customers to the existing network might be at the incumbent LEC's tandem, while later on the competitor may decide it is more cost effective to use another carrier, or possibly construct its own facilities, to transport traffic that has already been aggregated to a LEC end office for final termination. Unless the new firm faces prices for these choices that reflect costs, or unless there is a marketing or quality of service issue that can only be addressed by building facilities, there will be a strong temptation to free ride on the incumbent network, including adopting marketing strategies that maximize the use of the "free" termination input that bill and keep offers.

It is important to be clear that strategies involving the partial use of others' networks are not inappropriate by themselves. Where a particular firm determines, for example, that its special competencies and advantages lie in wireless technologies, it is unlikely ever to provide wireline technology based elements of service, although it is free to think about doing so. Strategies that proceed in this manner might be called "mix and match", and are a firmly ingrained feature of most of American industry. For example, IBM buys chips from Intel, Boeing buys engines from General Electric (and Pratt & Whitney, and Rolls Royce), and even the Ford Motor Company gave up producing virtually all of an automobile from coal and iron ore to final vehicle many years ago. In each of these cases, it is the relative costs of different approaches that drives the approach selected, and it is not the same for every company even within the same industry. Without clear, cost based price signals, however, the process of mixing and matching becomes biased and inefficient—in any industry, including wireless telecommunications. From this perspective, wireless communications is not ultimately a separate industry from the rest of telecommunications, or even a subindustry; rather, it represents a particular technology for communications generally, and will find its role best when it is employed in the most cost effective manner.

The actual process of providing interconnection will always impose at least some costs, even if they are not, in every circumstance, very large. The principal point here is that market-based pricing of services is an important

element in assuring that customers enjoy the benefits of real competition. Under the principle that each carrier, whether it is an incumbent or a new carrier, should recover fully the relevant costs that it incurs to terminate calls that originate on other networks, it is important to identify the sources of the costs, in order to ensure that pricing is compensatory.

For example, if traffic between networks is carried on dedicated trunks, the cost of providing those trunks would not be traffic sensitive, and therefore should not be charged on a traffic sensitive basis. The Commission itself has recognized in the NPRM that wherever costs are essentially fixed they should be recovered on a flat basis so as not to distort usage of the facilities. On the other hand, once the call is "handed-off" to the network which will actually terminate the call, it will generate traffic sensitive costs. Such traffic sensitive costs will include, for example, the cost of providing additional capacity if the times of call termination predominantly are at or around the peak period on that particular network, or network segment. Given the likely characteristics of interconnection scenarios, the best rate structure for interconnection pricing would seem to be a two part structure, possibly with a peak/non-peak usage based pricing element. The first, or flat rated part, would recover the cost of dedicated non-traffic sensitive facilities on a flat basis, while the usage sensitive rate would capture the cost of traffic sensitive facilities.

Where the interconnecting traffic places capacity demands on the terminating carrier, it is important in an increasingly competitive and market

driven world for that fact to be reflected in the pricing. In the pre-divestiture monopoly environment new facilities were constructed on the basis of an obligation to serve, rather than on the basis of a price or profit incentive. In the world that is unfolding, it is important not to discourage additional capacity provision, regardless of legal obligations. A zero price policy, which is what bill and keep is, tends to discourage investments in additional capacity. Only in the very unlikely event that the interconnection costs of the parties are actually zero will bill and keep lead to appropriate, that is efficient, investment decisions by the parties.

This sort of two part rate structure, when joined with the network unbundling contemplated by the new Telecommunications Act, will facilitate the mixing and matching of particular service elements from different providers that a competitive environment contemplates. A properly designed two part price structure allows the entrant more flexibility, and gives both the entrant and the incumbent better incentives, in combining the different elements that each provides.

V. SPECIFIC BILL AND KEEP ISSUES

Balance and Gaming. One claim sometimes advanced is that traffic between carriers will have a tendency to be balanced, and therefore that the flows of payment would about balance out. Where this is the case, as discussed later in these comments, parties can voluntarily agree to forego explicit payment. For required bill and keep to be efficient however, the requirements are stringent, and unlikely to be met- especially in the case of CMRS/LEC interconnection. In the general case, for bill and keep to "work" in an efficiency sense, a number of factors would have to coincide. First, traffic would have to remain in balance over a long period of time; second, both networks would have to have the same costs for call termination; third, neither (or both) would have special obligations of a universal service or similar nature; and fourth, both networks would have identical customers in terms of their originating/terminating ratios and willingness to pay. These are stringent requirements.

In addition there are strong incentives for an entrant to game the system by targeting customer segments that are heavy on origination of calls. Under bill and keep such segments will be relatively (and artificially to the extent that real costs are not being taken account of) profitable to serve since the carrier will not have to pay the terminating carrier for delivery of the call. Of course, such targeting is unlikely to be complete, and firms will not be uninterested in other

kinds of customers as long as they can cover the marginal costs of serving them, but this factor can nevertheless eliminate any presumption that there will be a balance of traffic. Simply asserting—or assuming—that traffic will be balanced is a risky step, and one that is unsupported by the facts regarding LEC-CMRS interconnection.

Another type of gaming is conceivable as well. For example, one can imagine an interexchange carrier deciding to terminate its traffic through a CMRS, which could in turn deliver the call via its interconnection arrangement with the LEC. Suppose the LEC access charge is 3.5¢. With an interconnection charge via the CMRS provider of 0¢, the CMRS could charge the IXC 1.5¢ benefiting both. Importantly, however, the extra step, will absorb real resources and hence increase overall costs in a way analogous to the externalities discussed earlier. Note that such an arrangement can be profitable to both the IXC and the CMRS, and that it would operate by avoiding the interstate access charge. While such a termination arrangement could in principle still be efficient, the fact that it avoids the access charge is suggestive of the potential for inefficiency. Bill and keep, i.e., zero pricing, will point alert firms toward just such arbitrage opportunities.

In the case of CMRS-LEC interconnection it is particularly unlikely to be the case that traffic is balanced. Additionally, it is unlikely, given the different configurations of the CMRS and LEC networks that the costs of terminating traffic are the same. LEC and CMRS providers price their services

in very different ways. The CMRS customer pays for incoming, as well as outgoing, calls. Not surprisingly, the customer does not publish or otherwise distribute her telephone number as widely as is typically the case in the wireline world. The result has been that CMRS providers have relatively large volumes of outgoing calls, and a smaller proportion of incoming ones. In other words, the traffic is not only unbalanced, but is systematically biased toward imbalance at the present time. While an influx of competition in CMRS could some day change the pricing approach, and hence the balance of traffic, there has yet to be any evidence that this is occurring at all, and certainly not at the rate necessary to make bill and keep an appropriate device.

Interim solutions The suggestion has been made in the NPRM that while cost based solutions to interconnection pricing must eventually be developed in order to assure that the network develops in an efficient manner, bill and keep would be more than a little a reasonable "interim" solution. In judging whether this is likely to be so it would be more than a little helpful to have a sense of just when "interim" would be over and "permanent" would begin. Such guidance has not been offered, and that raises a very real concern that a zero price regime could be in effect for a considerable period of time. A lengthy interim period has a number of problems associated with it.

First, many of those with an interest in this proceeding, and the Commission itself, have acknowledged at least in general terms the points that I have made above, namely, that a cost-based regime is ultimately the appropriate

one, although they differ on how it may be approximated. I have already argued the importance of correct pricing: that argument is as true today as it will be at some (undefined) later time.

Second, and closely related to the first point, major decisions on entry, network design, and competitive strategy are being formulated currently, and the outcome of this proceeding will have a significant effect on their shape. Major investment decisions, or decisions not to invest are being made now or will be in the very near future. Accurate price signals are needed now, not at some time to be determined in the future. Decisions by any particular party (entrant or incumbent) to invest or not to invest now, will have to be lived with for quite a while into the future. Policymakers must try to provide, as best they are able, a degree of certainty and a set of realistic expectations for industry players to act on now.

Third, the Commission must set out, at the outset, the principle of pricing correctly. Finding the correct price structure, which will almost certainly differ from situation to situation, will be complex, but can continue to be refined through market-driven negotiation processes, with the Commission only playing a role if negotiations have broken down.

Two final points should be made in this regard. Interim arrangements can last for periods much longer than were initially anticipated through inertia and administrative causes. The burden that the Commission faces over the next few years as a result of the new telecommunications law will require the

establishment of priorities; and while this proceeding may or may not remain at the top of the queue, not all can. There is cause for serious practical concern here. This proceeding is at a stage where the Commission is in a position to make a well informed and principled decision on the matter, and to avoid the need to revisit it as a policy matter sometime in the future. Lastly, the adoption of zero pricing will, in effect, create a new entitlement for a subset of telecommunications providers. The Commission should not have to be reminded that once created, entitlements are about as easy to extract as an impacted wisdom tooth, and the process is about as enjoyable.

Negligible costs. Another argument made by proponents of bill and keep is that the average costs of interconnection are so low as to be negligible. Such arguments are suspect as violating the "free lunch" theorem (there really is no such thing as a free lunch). Several points can be made. First, there is a genuine dispute over what the average costs are. Claims range from as low as $.002 to over $.01. This is not a trivial disagreement, and should not be assumed away. For Ameritech, this range encompasses tens of millions of dollars. Moreover, the use of an average cost figure itself may be quite misleading. As already noted, investment in capacity is expensive and related to peak demand—especially in the long term that the Commission should be worried about, given its goals for an efficiently structured telecommunications sector. Even if the average price turns out to be "low" (whatever benchmark that might be measured against) the cost of providing interconnection at peak times could well

be high, and imply a time differentiated structure to properly reflect costs at those times, so as to induce appropriate investment in the network.

Reciprocity. All firms who are interconnected, and who terminate calls originating on other carriers should be able to charge for that service if they wish to. Requiring both to charge zero does not meet that criterion, and therefore is not appropriate. In other words, reciprocity at a zero price is an insufficient condition either for efficient investment decisions or efficient competitive choices. All carriers should be charging cost based rates since, at least in the short run, each has market power over access to its own customers. Finally, reciprocal pricing does not mean symmetrical pricing. In particular, where, as is clearly the case here, the incumbent LEC is subject to special obligations or regulatory burdens not imposed on other firms, a price differential to reflect that fact is appropriate.

There is, of course, some historic experience with bill and keep arrangements in the telephone industry as well as elsewhere. But in making comparisons it is important to take account of differences as well as similarities. Contrary to claims by some potential entrants who point to the historical "success" of bill and keep compensation arrangements among independent, non-competing, geographically contiguous LEC's that have historically exchanged local or EAS traffic, bill and keep cannot be extended on the same basis to a market with competing, rather than non-competing, firms. Moreover, there were (and are) extensive subsidy flows between these carriers that make any

conclusions about the appropriateness of interconnection arrangements at least problematic. Today's LECs, CLECs, and wireless providers are all, to a greater or lesser degree, in competition with each other within overlapping service territories, and their strategic interests therefore are quite different. In particular, under bill and keep, free riding on a competitor's network is a real option—even for some very large and well-financed firms.

Cost standard. The appropriate standards for determining the costs of interconnection are the same as they are for any service provided by a regulated firm, and begin with long run incremental cost (LRIC). In an unregulated industry the analysis would end here as well, but there is more to be said in a regulated setting. To the extent pricing all services at LRIC does not satisfy the revenue requirement, an overhead markup is required, and can be applied to interconnection service as well as others. Any universal service or similar regulatory obligations borne by the LEC should also be accounted for. The LEC should also have a reasonable opportunity to recover past investments that might be stranded (if any) as their formerly exclusive market is opened to competition. (This does not extend, however, to indemnification for loss of future customers that they might have had under a continued monopoly world or any monopoly profits, they may have been enjoying in spite of the regulator's efforts. Nor, of course, should costs that will be avoided when customers are lost as a consequence of interconnection policies be recovered.)